



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,278	12/03/2003	David E. Bronaugh	D-2763/WOD	1584
7590 03/15/2006			EXAMINER	
William O'Driscoll			NGUYEN, NINH H	
Trane			ART UNIT	
12-1			PAPER NUMBER	
3600 Pammel Creek Road			3745	
La Crosse, WI 54601			DATE MAILED: 03/15/2006	

Please find below and/or attached an Office communication concerning this application or proceeding.

### Period for Reply

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-17 and 19-43 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6, 8, 9, 16, 27 and 33 is/are allowed.
- 6) ☒ Claim(s) 1-5, 10-15, 19-26, 28-32, 34-43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 08/24/05 have been fully considered but they are not persuasive.

Applicant amends claim 1 to include the limitation of the rejected claim 18 and argues that the material comprising the wall of Hynes is not a type of being "applied with current to generate heat". Applicant further cites page 2, column 1, lines 7-11 of Hynes reference to illustrate his point. In addition, Applicant alleges no references show varying the amount of heat generated within the housing wall as recited in claim 38.

The Examiner respectfully disagrees.

In the quotation above, it is assumed that "current" means an electric current. Applicant misread the Hynes teaching. Page 2, column 1, lines 7-11 explains how the air is heated by the heating element 27. It does not mean the air impinging on the heating 27 somehow causes the heating element 27 to be heated up. In fact, on page 1, right column, lines 48-56, Hynes states "Located inside of the scroll casing 25 are heating elements 27, which, in the forms illustrated in Figures 2 and 3 each consisting of a plurality of flat electric [emphasis added] heater elements arranged edge to edge in parallel relation, in such manner as to conform to the contour of the inner surface of the scroll casing 25". Further, since, the electric heater elements of Hynes conform to the contour of the inner surface of the scroll casing 25, the scroll casing satisfies applicant's definition of a "heat-generating housing wall" in which "a heating element lies directly on or within the wall" on page 5, lines 17-18 of Applicant's specification.

Art Unit: 3745

Regarding claim 38, Hynes discloses a thermostat e (Fig. 13) which can be used to vary the amount of heat generated within the housing wall.

Therefore, Hynes anticipates some of the claims of the invention as set forth in the rejections below.

### ***Claim Objections***

2. Claim 19 is objected to because of the following informalities: the claim should depend on claim 1 since claim 18 has been canceled. Appropriate correction is required.

Note: it is assumed that claim 19 is dependent on claim 1 in this Office Action.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 11, 12, 15, 20, 29, 30, 32, 34, 35, and 38-41 are rejected under 35

U.S.C. 102(b) as being anticipated by Hynes (1,991,280).

Hynes discloses a blower (Figs. 1-14) comprising a blower housing defining a suction opening and a discharge opening (Fig. 1); a rotating blower element F disposed within the blower housing and being in fluid communication with the suction opening and the discharge opening, wherein the rotating blower element forces the current of air from the suction opening to the discharge opening; and a heat-generating housing wall 27 borne by the blower housing and

Art Unit: 3745

interposed between the suction the discharge opening, wherein the heat-generating provides electrically generated heat that heats the air (page 1, right column, lines 48-52);

wherein the blower is a centrifugal fan (Fig. 1);

wherein the blower is an axial fan (Fig. 10);

wherein the blower housing comprises at least two sections that are joined at a seam (Fig. 1), and the blower further comprises an electrical node adjacent to the seam (Fig. 1) for providing electrical power to the heat-generating housing wall to reduce hat losses therethrough; and

wherein the heat generating housing wall is comprised of a material which generates heat in response to the application of current (page 1, right column, lines 48-52);

wherein the scroll casing is scroll casing is generally made of a metal material which in inherently more electrically conductive than the heat generating material.

3. Claims 1, 20, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Kashihara et al. (4,228,124).

Kashihara discloses a blower (Figs. 1-6) comprising a blower housing defining a suction opening 3 and a discharge opening (Fig. 1); a rotating blower element 4 disposed within the blower housing and being in fluid communication with the suction opening and the discharge opening, wherein the rotating blower element forces the current of air from the suction opening to the discharge opening; and a heat-generating housing wall 6 borne by the blower housing and

Art Unit: 3745

interposed between the suction the discharge opening, wherein the heat-generating provides electrically generated heat that heats the air (col. 11, lines 38-40);

wherein the blower further comprising a semiconductive wire lying in intimate contact with the heat generating housing wall (Fig. 1; col. 8, lines 6-11);

wherein the conductive material includes a nickel and chromium alloy (col. 8, lines 6-11); and

wherein the blower housing is made of iron which is more electrically conductive than the heat generating material.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 3, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes in view of Reuter et al. (4,060,710).

Hynes discloses all the limitations except the heat generating housing wall does not comprises a resin substrate impregnated with a conductive material that is more electrically conductive than the resin substrate as claimed.

Reuter teaches a well known heating element comprises a plastic flexible carrier impregnated with conductive graphite (col. 1, lines 41-48).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the blower of Hynes with the heat generating housing wall comprises the heating element of Reuter as an expedience to provide a heating element for the blower.

6. Claims 4, 5, 10, 19, 21, 22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes in view of Smith-Johannsen (2,952,761).

Hynes discloses all the limitations except the heat generating housing wall does not comprises an outer layer and an inner layer, wherein the inner layer is more conductive than the outer layer; a thermosetting resin; nor the conductive material includes graphite as claimed.

Smith-Johannsen teaches conductive laminated structures comprising a layer of porous conductive structure laminated with thermosetting layers to form a dense homogeneous product (col. 1, lines 42-55) for use in portable space heater and the like (col. 1, lines 31-36); wherein porous conductive structure comprises graphite (col. 2, line 9-14).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the blower of Hynes with the heat generating housing wall comprising conductive laminated structures of Smith-Johannsen as an expedience for the providing heating capability for the blower housing wall.

Regarding claim 5, Since the applicant has not disclosed that having the inner layer includes a graphite cloth solves any stated problem or is for any particular purpose above the fact that a graphite cloth is a form of heating elements, and it appears that the modified blower of Hynes in view of Smith-Johannsen would perform equally well with the inner layer or the porous

Art Unit: 3745

conductive structure made of graphite cloth as defined claimed by applicant, it would have been an obvious matter of design choice to modify the porous conductive structure of Hynes in view of Smith-Johannsen by utilizing the specific material as claimed.

7. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes in view of Hoffman (1,948,759).

Hynes discloses all the limitations except the conductive material is not a wire as claimed.

Hoffman teaches an electric heater comprising a fan disposed in a housing, a heating element in form of a conductive wire positioned adjacent to the fan (Figs. 1-11).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the blower of Hynes with the conductive material is a wire for the purpose of providing a heating element as a commonly done in the art.

8. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes in view of Kashihara et al. (4,228,124).

Hynes discloses all the limitations except the blower the conductive material does not include a nickel and chromium alloy as claimed.

Kashihara teaches a blower comprising a housing (Fig. 1), an impeller 4 disposed within the housing and a heating element 6 is in intimate contact with the housing wall; wherein the heating element is semiconductive wire made from nickel chromium (col. 8, lines 6-11).



Art Unit: 3745

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the blower of Hynes with a semiconductive wire made of nichrome wires as an expedience for of providing a heating element for the housing wall as taught by Kashihara.

9. Claims 13, 17, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes in view of Hoffman.

Hynes discloses all the limitations except the heat generating housing wall does not comprises a plurality of heating elements that can be selective energized individually as claimed.

Hoffman teaches an electric heater (Figs. 1-11) comprising a housing, a fan connected to a shaft of a motor disposed inside the housing (Fig. 2), heating elements 6 and 7 position next to the fan, and switches 50-52 to selectively energize the heating elements individually (page 3, lines 79-101).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the blower of Hynes with a plurality of heating elements controlled by a plurality of switches to selectively energize the heating elements individually for the purpose controlling the heating level of the blower as taught by Hoffman.

10. Claims 14 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes in view of Turner (4,208,644).

Hynes discloses all the limitations except the heat generating wall does not provide infinitely adjustable levels of heat as claimed.

Turner teaches an infinite switch for controlling temperature of heating elements (col. 1, lines 18-23).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the blower of Hynes with the infinite switch of Turner for the purpose of providing an infinitely adjustable heat output as taught by Turner.

11. Claims 34, 36 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynes in view of Hoffman as applied to claim 25 and in further view of Nopanen (4,008,388).

Hynes inherently discloses all the limitations except the conductive material is not a wire and the step of selectively varying the length of an electrical path within the blower housing wall as claimed.

Hoffman teaches an electric heater comprising a fan disposed in a housing, a heating element in form of a conductive wire positioned adjacent to the fan (Figs. 1-11).

Nopanen teaches a method of using a blower to heat air comprising the steps of supporting the blower element within the blower housing, rotating the blower element to force the air through the blower housing, heating the air by generating heat within the blower housing and selectively varying the length of an electrical path within the blower housing (Figs. 1-4, col. 2, lines 12-45).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to utilize the method of using a blower to heat air with of Hynes with the conductive material is a wire as an expedience to provide a heating element, and the step of

Art Unit: 3745

selectively varying the length of an electrical path within the blower housing for the purpose of controlling the heat out put of the blower as taught by Nopanen.

***Allowable Subject Matter***

12. Claims 6, 8, 9, 27, and 33 are allowed.

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

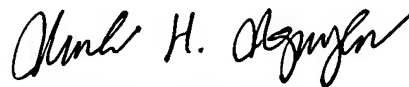
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

Art Unit: 3745

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).

  
**NINH H. NGUYEN**  
**PRIMARY EXAMINER**

Nhn  
March 13, 2006